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Effect of muscle length on fatigue induced by low frequency current stimulation in human medial gastrocnemius muscle

Sameh Refaat Ahmed Ibrahim, Waleed Salah ElDin Mohamed Morshed and Tarek Mohammed El Gohary
Cairo University, Egypt

Background: Many factors contribute to control the contractile properties of a muscle. One of these factors is muscle length, which is inversely related to the relaxation phase of the muscle. When the muscle is lengthened the relaxation phase of the muscle twitch is prolonged and when muscle is shortened, the relaxation phase is shorter in duration. As a result, a motor unit discharge varies with the muscle length during voluntary contractions. During electrical stimulations, the order of contraction of muscle fibers is reversed.

Purpose: In order to determine, if motor neuron discharges accommodates the changes imposed by changing muscle length during electrically fatiguing protocol and motor unit action potentials were recorded from medial gastrocnemius muscle at different muscle lengths.

Material & Methods: Sixty healthy male subjects were involved, aged between 18–60 years. They were divided into 2 equal groups. Subjects in the first group underwent 40 Hz frequency stimulation with the muscle in lengthen position while subjects in the second group underwent 40 Hz frequency stimulation with the muscle in shortened position. Subjects were required to tolerate a fatiguing protocol for 20 minutes. The amplitude CMAP were measured pre-test and immediately post-test.

Results: There was significant decrease in the amplitude of CMAP in both groups.

Conclusion: Decline in the amplitude of CMAP do exist between individuals before and after low frequency stimulation (fatiguing protocol) in both groups, but the decline is more pronounced with the muscle in stretched position.

drsraibrahim@gmail.com

Post viral arthralgia – An insight to the physiotherapist

Senthilkumar Thiyagarajan
The Oxford College of Physiotherapy, India

Post viral arthralgia is one of the complications, among other serious complications caused by viral infection. The immune response to such a virus will attack the body's own cells. This cross-reactivity causes inflammation of tissues and damage to the cells. Even after the virus is eliminated from the body, the changes in the joint can continue to cause pain and swelling. The post poly viral outrage should be the opt terminology to identify the multiple joint pains after infectious viral fever. The fastest spreading of infections during the period of the epidemic which affects numerous populations, in India like populated country. Morning Joint Stiffness are one of the serious symptoms which affects overall quality of life and functional activities in the affected person. The joint pain is typically severe and can vary in location and duration. Physical therapy management would help early recovery of those who are suffering from post viral arthralgia and promote their QOL and functional activity. Functionally structured and designed exercise prevents further deterioration of joint function. Herbal made natural cure such as *nilavembu kasayam* beneficial for avoiding recurrence of viral infection and boost our immune system.

senphysio1981@gmail.com